REMARKS / DISCUSSION OF ISSUES

Claims 1, 4-8, 10-11, 13-14, 17, and 21-28 are pending in the application.

Claims 1 and 6 are amended to conform to the Office action's requirement for inclusion of a physical description instead of a product-by-process clause. No new matter is added, and the scope of the claims is unchanged.

The Office action rejects claims 1, 4-5, 8, and 14 under 35 U.S.C. 103(a) over Schoo et al. (USP 6,326,091, hereinafter Schoo) and Hayashi et al. (USP 6,806,643, hereinafter Hayashi). The applicants respectfully traverse this rejection.

Claim 1, upon which claims 4, 5, 8, and 14 depend, claims an electroluminescent device that includes an electrode having a profile that is characteristic of having been ink-jet printed in a molten form, and is at least 5 μm thick.

The Examiner's attention is requested to MPEP 2142, wherein it is stated:

> "To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) ***must teach or suggest all the claim limitations***... If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

Neither Schoo nor Hayashi teach or suggest an electrode having a profile that is characteristic of having been ink-jet printed in a molten form, and neither Schoo nor Hayashi teach or suggest that the electrode is at least 5 μm thick.

The Office action acknowledges that Schoo does not teach an electrode that is at least 5 μm thick, and asserts that Hayashi provides this teaching. The applicants respectfully disagree with this assertion. Hayashi specifically teaches: "The cathode should preferably be 50 nm to 500 nm thick, particularly 50 nm to 300 nm thick" (Hayashi, column 11, lines 34-36), which is less than a tenth of the claimed 5 μm (5000 nm) thickness.

Because neither Schoo nor Hayashi teach or suggest an electrode having a profile that is characteristic of having been ink-jet printed in a molten form, and is at least 5 μm thick, the applicants respectfully request the Examiner's reconsideration of the rejection of claims 1, 4-5, 8, and 14 under 35 U.S.C. 103(a) over Schoo and Hayashi.

The Office action rejects:

claim 6 under 35 U.S.C. 103(a) over Schoo, Hayashi, and Yudasaka et al. (USP 6,541,918, hereinafter Yudasaka);

claim 7 under 35 U.S.C. 103(a) over Schoo, Hayashi, and Strum et al. (USP 6,087,196, hereinafter Strum); and

claim 17 under 35 U.S.C. 103(a) over Schoo, Hayashi, Yudasaka, and Strum.

The applicants respectfully traverse these rejections. Each of these rejected claims are dependent upon claim 6, which claims an electroluminescent device that includes an electrode that includes a profile that is characteristic of being ink-jet printed in a molten form and is at least 5 μm thick.

Neither Schoo, Hayashi, Yudasaka, nor Strum teaches or suggests an electrode that includes a profile that is characteristic of being ink-jet printed in a molten form and is at least 5 μm thick, and therefore the applicants respectfully request the Examiner's reconsideration of the above rejections under 35 U.S.C. 103(a) over Schoo, Hayashi, Yudasaka, or Strum.

The Office action rejects:

claims 10, 13, and 22 under 35 U.S.C. 103(a) over Schoo and Gao et al. (USPA 2002/0051893, hereinafter Gao);

claims 11 and 21 under 35 U.S.C. 103(a) over Schoo, Gao, and Yudasaka; and

claims 23-25 under 35 U.S.C. 103(a) over Schoo, Gao, and the Applicants' Admitted Prior Art (hereinafter AAPA).

The applicants respectfully traverse these rejections. Each of these rejected claims depend upon claim 10, which claims a method that includes ink-jet printing molten metal or metal alloy in accordance with a desired pattern such that, upon cooling of the molten metal or metal alloy, the metal or metal alloy electrode is formed atop the one or more layers of organic electroluminescent material and is at least 5 μm thick.

The Office action acknowledges that Schoo does not teach ink-jet printing molten metal. Gao is silent with regard to a thickness of an electrode, because Gao only teaches the creation of contact points on an LED.

Gao's FIG. 2 illustrates a profile of the created structure that includes a contact formed by the printing of a molten alloy. Although this figure is not drawn to scale, per se, the center emitting layer is illustrated as being about 100nm thick, and the contact is illustrated as being substantially the same thickness. The applicants claim an electrode that is at least fifty times thicker than a 100nm thick layer, and respectfully suggest that if Gao's contact were at least fifty times thicker than the 100nm emitting layer of Gao's FIG. 2, it would not be illustrated as being approximately the same thickness. One of ordinary skill in the art would not be lead by the teachings or illustrations of Gao to form an electrode of at least 5000 nm thickness.

Because neither Schoo nor Gao teaches or suggests ink-jet printing molten metal such that the electrode is formed atop the one or more layers of organic electroluminescent material and is at least 5 μm thick, as specifically claimed in claim 10, the applicants respectfully request the Examiner's reconsideration of the rejection of claims 10, 11, 13, and 21-25 under 35 U.S.C. 103(a) over Schoo, Gao, Yudasaka, or AAPA.

The Office action rejects claims 26-28 under 35 U.S.C. 103(a) over Schoo, Hayashi, and AAPA. The applicants respectfully traverse this rejection.

Claim 26 claims a method that includes ink-jet printing a selection layer on the surface to facilitate selective depositing of a metal or metal alloy upon the surface; and ink-jet printing the metal or metal alloy upon the surface to form the electrode at a thickness of at least 5 μm in accordance with the desired pattern.

As noted above, neither Schoo nor Hayashi teaches or suggests ink-jet printing a metal or metal alloy upon the surface to form the electrode at a thickness of at least 5 μm, and therefore the applicants respectfully request the Examiner's reconsideration of the rejection of claims 25-28 under 35 U.S.C. 103(a) over Schoo, Hayashi, and AAPA.

In view of the foregoing, the applicants respectfully request that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Robert M. McDermott
Reg. 41,508
Att'y for Applicant(s)

1824 Federal Farm Road
Montross, VA 22520
Phone: (804) 493-0707
Fax: (215) 243-7525